



Enhancing our natural environment

River restoration and management, UK

Our restoration services identify practical ways to find a more natural balance between a river running its natural course and robust measures for flood risk management, ecological enhancement and social amenity.

Many of our clients are tackling the results of historical decisions to protect land and property from flooding, drain land to increase agricultural production and support navigation. Modifications to rivers and their floodplains have caused serious damage in some cases. We help clients address these issues.

Our approach

Much of our work is about restoring or rehabilitating rivers. By moving towards a more naturally functioning and less-constrained river and floodplain, we can reduce the level of intervention needed to manage issues like flooding, maintaining habitats and improving the environment.

With the river's dynamic function restored as much as possible, it can start to heal itself and support a more balanced ecology, within the constraints of a modern landscape.

Our team applies its considerable experience in all aspects of river and wetland management and restoration, from policy development and strategic planning to project implementation. We have a reputation for developing innovative, robust and

pragmatic solutions by combining experience in environmental engineering with expertise in river and wetland processes. Our award-winning work has gained industry recognition for multi-disciplinary capability, positive relationships and exceptional projects that offer real value to our clients.

Our services

Our experts provide a comprehensive range of skills through integrated teams comprising civil engineers, ecologists, geomorphologists, hydrologists and landscape architects, covering all aspects of water management. Our highly capable project managers are experienced in bringing together contributions from these diverse, multi-disciplinary teams.

We offer a global service to the public and private sectors, taking projects from inception through to completion. We have expertise in the many diverse specialist areas within river restoration, including:

- hydrological analysis of river flows
- geomorphological survey and analysis
- hydraulic modelling of rivers and floodplains
- water quality and sediment modelling
- ecological survey, interpretation and design
- environmental impact assessment
- planning and flood risk assessment
- geotechnical and topographical survey
- landscape architecture
- engineering design and economic appraisal
- construction supervision, including environmental clerk of works

Delivering value – case studies

■ Strategic framework for the restoration of the River Avon system

Our robust and defensible framework will guide justification and prioritisation for river restoration works within this river catchment. The strategy includes detailed fluvial geomorphological audit and ecological interpretation, together with outline restoration options, costs and a prioritisation tool for 260km of river.

■ Cost estimation for restoring rivers in sites of special scientific interest in England

Working with the Environment Agency's head-office and area staff, we identified cost-effective methods of river restoration in vulnerable areas. The spreadsheet-based costing tool we developed aids estimation of likely costs of river restoration on these rivers.

■ Restoration and diversion of the River Nith

The River Nith, a key route for Scottish salmon, passed through the site of an open-cast coal mine, which has areas of highly permeable ground along a narrow corridor. Permanently diverting 2.8km of river, Halcrow developed a clay-lined, two-stage channel profile, incorporating pool-riffle-run sequences to generate suitable habitats for fish and other species. An extension to mining operations provided an opportunity to divert another 3km, with further ecological enhancements.

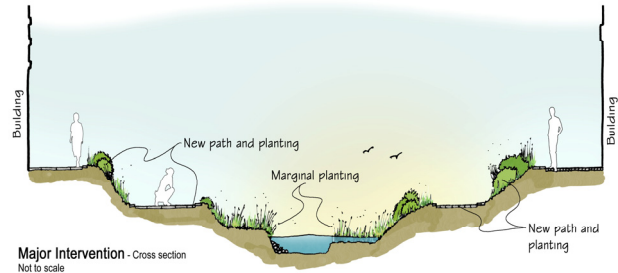


Aerial view of River Nith restoration

■ Transforming Trowbridge – restoration plans for the River Biss

The Public Realm Design and Implementation Plan for Trowbridge provides a practical strategy for transforming its river corridor, capitalising on the

hidden waterfront, improving the potential for investment and enhancing the image of the town. The project investigated opportunities to enhance the public spaces and places on the river corridor.



River cross section showing proposals for the river corridor

■ Avington and Newbury river restoration

We undertook the detailed design and construction supervision for a two-year river restoration project on the rivers Kennet and Lambourn. The project involved removal of and restoration and management changes to water control structures, as well as river narrowing and raising the riverbed. The Newbury project won the ICE Environmental Award in June 2009 in the Thames region.



Environmental clerk of works supervision on the River Kennet

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